

Claims

1. A reproduction apparatus which reads and reproduces audio information and another kind of information from a record medium where the audio information and another kind of information are recorded, characterized in that:

the reproduction apparatus includes,

a reading means for reading the audio information from the record medium, and reading, from the record medium, another kind of information recorded in a different position from the position of the audio information,

a capacity-lowering means for lowering the capacity of the audio information read by the reading means,

an audio storing means for storing the audio information whose capacity is lowered by the capacity-lowering means,

an audio reproducing means for reproducing the audio information stored in the audio storing means,

an another-kind-of-information storing means for storing another kind of information read by the reading means, and

an another-kind-of-information reproducing means for reproducing another kind of information stored in the another-kind-of-information storing means;

the audio information includes first audio information, and second audio information which is continuously reproduced after the first audio information; and

the capacity-lowering means lowers the capacity of the first audio information read by the reading means, so that the reading of the second audio information is completed before the reproduction of the first audio information is completed, for the period of time when another kind of information is reproduced by the another-kind-of-information reproducing means.

2. The reproduction apparatus according to claim 1, characterized in that another kind of information is at least either of image information and video information.

3. The reproduction apparatus according to claim 1 or 2, characterized in that the capacity-lowering means lowers the sampling frequency of the audio information read by the reading means.

4. The reproduction apparatus according to any of claims 1 to 3, characterized in that the capacity-lowering means reduces the quantization bit number of the audio information read by the reading means.

5. The reproduction apparatus according to any of claims 1 to 4, characterized in that the capacity-lowering means detects at least one of the silent interval, interlude interval, prelude interval and voiceless interval of the audio

information read by the reading means, and lowers the capacity of only the part which corresponds to at least one of the silent interval, interlude interval, prelude interval and voiceless interval.

6. The reproduction apparatus according to any of claims 1 to 5, characterized in that the capacity-lowering means changes the capacity-lowering ratio in accordance with the sound volume of the audio information read by the reading means.

7. The reproduction apparatus according to any of claims 1 to 6, characterized in that the capacity-lowering means changes the capacity-lowering ratio in accordance with at least either of the quantity of a change in the sound pitch and the quantity of a change in the sound loudness of the audio information read by the reading means.

8. The reproduction apparatus according to any of claims 1 to 7, characterized in that if the capacity-lowering means lowers the capacity of a part of the audio information read by the reading means, the capacity-lowering means changes the capacity-lowering ratio gradually on the boundary between the audio information of the part whose capacity is lowered and the audio information of the part whose capacity is not lowered.

9. The reproduction apparatus according to any of claims 1 to 8, characterized in that the capacity-lowering means changes the capacity-lowering ratio of the audio information read by the reading means, based on the storage capacity of the audio storing means.
10. The reproduction apparatus according to any of claims 1 to 9, characterized in that the record medium where the audio information and another kind of information are recorded is a disk-shaped rotary record medium.
11. The reproduction apparatus according to claim 10, characterized in that in the disk-shaped rotary record medium, information is recorded using one of a magnetic phenomenon, an optical phenomenon, an electrical phenomenon and a combination of some of these phenomena.
12. The reproduction apparatus according to claim 11, characterized in that the reading means includes a head which executes a scan on the disk-shaped rotary record medium and reads information recorded thereon using one of a magnetic phenomenon, an optical phenomenon, an electrical phenomenon and a combination of some of these phenomena.
13. The reproduction apparatus according to claim 12,

characterized in that the capacity-lowering means changes the capacity-lowering ratio of the audio information read by the reading means, based on the movement speed of the head.

14. The reproduction apparatus according to claim 12 or 13, characterized in that the capacity-lowering means changes the capacity-lowering ratio of the audio information read by the reading means, based on the movement speed of the head and the storage capacity of the audio storing means.

15. The reproduction apparatus according to any of claims 10 to 14, characterized in that the capacity-lowering means changes the capacity-lowering ratio of the audio information read by the reading means, based on the position on the record medium in which the audio information is recorded and the position on the record medium in which another kind of information is recorded.

16. A reproduction processing circuit which reproduces audio information and another kind of information read from a record medium where the audio information and another kind of information are recorded, characterized in that:

the reproduction processing circuit includes,
an information deciding means for deciding which the information read from the record medium is, the audio

information or another kind of information,

a capacity-lowering means for, if the decision is made that the information read from the record medium is the audio information, then lowering the capacity of the audio information and storing the audio information whose capacity is lowered in an audio storing means, and

an expanding means for expanding the audio information stored in the audio storing means;

the audio information includes first audio information, and second audio information which is continuously reproduced after the first audio information; and

the capacity-lowering means lowers the capacity of the first audio information expanded by the expanding means, so that the reading of the second audio information is completed before the reproduction of the first audio information is completed.

17. A reproduction method for reading and reproducing audio information and another kind of information from a record medium where the audio information and another kind of information are recorded, characterized in that:

the reproduction method includes,
an audio-information reading step of reading the audio information from the record medium,

a capacity-lowering step of lowering the capacity of the audio information read in the audio-information reading

step,

an audio storing step of storing, in an audio storing means, the audio information whose capacity is lowered in the capacity-lowering step,

an audio reproducing step of reproducing the audio information stored in the audio storing means,

an another-kind-of-information reading step of reading, from the record medium, another kind of information recorded in a different position from the position of the audio information,

an another-kind-of-information storing step of storing, in an another-kind-of-information storing means, another kind of information read in the another-kind-of-information reading step, and

an another-kind-of-information reproducing step of reproducing another kind of information stored in the another-kind-of-information storing means;

the audio information includes first audio information, and second audio information which is continuously reproduced after the first audio information; and

in the capacity-lowering step, the capacity of the first audio information read in the reading step is lowered, so that the reading of the second audio information is completed before the reproduction of the first audio information is completed, for the period of time when another kind of information is reproduced in the another-kind-of-information

reproducing step.

18. A reproduction program for reading and reproducing audio information and another kind of information from a record medium where the audio information and another kind of information are recorded, characterized in that:

the reproduction program allows a computer to function as,

a reading means for reading the audio information from the record medium, and reading, from the record medium, another kind of information recorded in a different position from the position of the audio information,

a capacity-lowering means for lowering the capacity of the audio information read by the reading means,

an audio storing means for storing the audio information whose capacity is lowered by the capacity-lowering means,

an audio reproducing means for reproducing the audio information stored in the audio storing means,

an another-kind-of-information storing means for storing another kind of information read by the reading means, and

an another-kind-of-information reproducing means for reproducing another kind of information stored in the another-kind-of-information storing means;

the audio information includes first audio information, and second audio information which is continuously reproduced

after the first audio information; and

the capacity-lowering means lowers the capacity of the first audio information read by the reading means, so that the reading of the second audio information is completed before the reproduction of the first audio information is completed, for the period of time when another kind of information is reproduced by the another-kind-of-information reproducing means.

19. A computer-readable record medium where a reproduction program is recorded for reading and reproducing audio information and another kind of information from a record medium where the audio information and another kind of information are recorded, characterized in that:

the reproduction program allows a computer to function as,

a reading means for reading the audio information from the record medium, and reading, from the record medium, another kind of information recorded in a different position from the position of the audio information,

a capacity-lowering means for lowering the capacity of the audio information read by the reading means,

an audio storing means for storing the audio information whose capacity is lowered by the capacity-lowering means,

an audio reproducing means for reproducing the audio information stored in the audio storing means,

an another-kind-of-information storing means for storing another kind of information read by the reading means, and

an another-kind-of-information reproducing means for reproducing another kind of information stored in the another-kind-of-information storing means;

the audio information includes first audio information, and second audio information which is continuously reproduced after the first audio information; and

the capacity-lowering means lowers the capacity of the first audio information read by the reading means, so that the reading of the second audio information is completed before the reproduction of the first audio information is completed, for the period of time when another kind of information is reproduced by the another-kind-of-information reproducing means.